WETLAND MITIGATION PLAN

For

Proposed Port Arthur Marine Terminal
Jefferson County, Texas

Prepared for:

Port Arthur LNG Holdings, LLC
c/o Sempra Energy
363 North Sam Houston Parkway East, Suite 1100
Houston, TX 77060

September 2008

TBS Project Number 2008.1303

Prepared by:

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA Lafayette, LA Baton Rouge, LA Thibodaux, LA
1 (866) 357-1050 www.tbsmith.com

TABLE OF CONTENTS

LIST OF ATTACHMENTS

1.0 INTRODUCTION

Port Arthur LNG Holdings, LLC (PORT ARTHUR) is proposing to construct and operate a combined liquefied petroleum gas (LPG), crude oil (CO), and refined products import/export terminal along the western bank of the Sabine Neches Waterway. The terminal facilities will be on a site currently owned by Port Arthur LNG Holdings, LLC, near Port Arthur, Jefferson County Texas.

The terminal will be a trans-shipping terminal and suitable for 24-hour operation. The proposed terminal will have a dredged basin with two loading/unloading berths, slope protection, onshore tanks, and pumping facilities.

Associated with the project is the relocation of approximately 3.3 miles of existing Texas State Highway (SH) 87 and associated utilities that parallel the highway. The relocation of SH 87 was previously authorized by the U.S. Army Corps of Engineers (USACE) on February 14, 2008 in USACE permit 23734. This relocation will be included in the proposed Port Arthur Marine Terminal project and a modification will be submitted to remove the section relating to the Highway relocation and associated mitigation from Permit 23734 for concurrent approval.

Construction of the two berths will require the dredging of up to 1.6 million cubic yards of material. The dredged material will be beneficially used in an area within the JD Murphree Wildlife Management Area. The material will be used to fill two canals between Round Lake and Lost Lake and to fill areas of degraded marsh in a 1700-acre area known as Pintail Flats.

2.0 WETLAND IMPACTS ANALYSIS

Impacts to wetlands from the proposed marine terminal were calculated based on wetland acreage determinations conducted on the property in accordance with procedures outlined in the USACE Wetland Delineation Manual, 1987. A wetland delineation was conducted on the portions of the project area west of existing SH 87 in October 2004. A jurisdictional determination approving the wetland delineation was received from the U.S. Army Corps of Engineers (USACE) on June 8, 2005. A wetland delineation outlining the wetlands located on the remaining portions of the project area was conducted in June 2008, and is awaiting the USACE jurisdictional determination.

Utilizing previously conducted field assessments and consultation with the state and federal resource agencies, PORT ARTHUR developed the potential impacts outlined in the sections below for each portion of the project.

The proposed marine terminal site and highway relocation will impact approximately 234.1 acres along the Sabine Neches Waterway. The majority of the property consists of previously disturbed wetlands that were used for dredged material disposal during the dredging of the Sabine Neches Waterway. The last use of this area for dredged material disposal was in 1987. The project will permanently impact approximately 139.9 acres of the previously disturbed wetlands.

2.1 Terminal Impacts

The proposed marine terminal site encompasses 145.4 acres, which includes 22.3 acres of uplands and 123.1 acres of wetlands. The impact of construction of the Marine Terminal site on wetlands will be the permanent loss of 123.1 acres of wetlands, consisting of 14.1 acres of brackish marsh, 13.6 acres of intermediate marsh, and 95.4 acres of previously disturbed emergent wetlands. No temporary wetland impacts will be associated with the marine terminal site.

2.2 Highway Relocation

The 260-foot-wide relocated highway corridor encompasses 108.4 acres, which includes 10.5 acres of uplands and 97.9 acres of wetlands. Temporary wetland impacts equal 81.4 acres. Permanent wetland impacts as a result of the highway relocation equal 16.5 acres.

The remainder of the right-of-way, other than that located within the proposed terminal site, will be allowed to naturally re-vegetate with native species following utility placement and associated construction activities related to the highway. At the request of the Texas Parks and Wildlife Department (TPWD) an access road is proposed that will permanently impact approximately 0.3 acres of wetlands.

2.3 Total Project Impacts

The following table outlines the temporary and permanent impacts of the proposed marine terminal and highway relocation.

Table 1. Total Acreage Impacted by the Proposed Marine Terminal.

	Non-Wetland Acreage Impacted	Wetland Acreage Impacted		**Total**
		Temporary	Permanent	
Marine Terminal	22.3	0.0	123.1	**145.4**
Highway Relocation (w/ utility corridor)	10.5	81.4	16.5	**108.4**
Portion of Highway Relocation within Terminal Footprint*	(3.0)	(17.2)	(0.0)	**(20.2)**
TPWD Access Road	0.2	0.0	0.3	**0.5**
Total	**30.0**	**64.2**	**139.9**	**234.1**

* The portion of the Highway Relocation falling within the Terminal Footprint was previously permitted under the original highway construction as having permanent impacts, therefore this acreage has not been included in the total impacts.

3.0 MITIGATION PROPOSAL

On-site mitigation is not feasible since the affected lands are being permanently taken. Near-site mitigation through creation or enhancement of emergent wetlands is a viable option and would result in mitigation in kind, suited to the ecology of the project area. Based on previous comments and recommendations of the resource agencies, as well as a review of previous project proposals in the vicinity of the proposed marine terminal, PORT ARTHUR proposes to mitigate for the project impacts at a ratio of 1.6 acres of mitigation for every 1 acre of impact. The mitigation for the project's total permanent impact of 139.9 acres will be accomplished by undertaking a 225-acre beneficial use project. Of the 225-acre mitigation 27 acres will be utilized for impacts resulting from the highway relocation and the remainder will be used for the rest of the project.

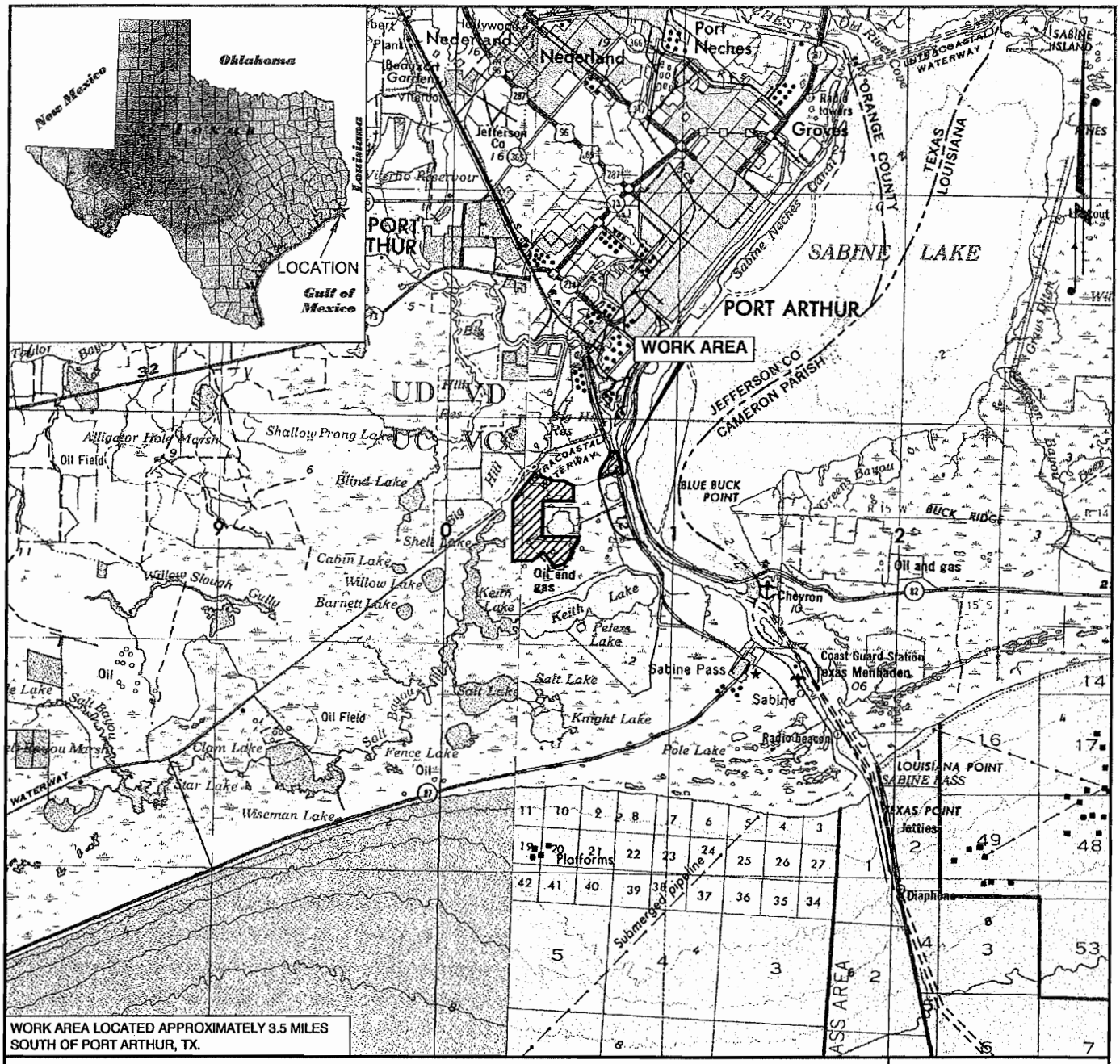
The 225-acre beneficial use project will utilize up to 1.6 million cubic yards of dredged material generated from construction of the proposed marine terminal ship berths and place the material on the J.D. Murphree Wildlife Management Area (WMA) managed by the Texas Parks and Wildlife Department (TPWD). In the WMA, sections of the marsh are converting to shallow open water areas due both to the loss of influx of freshwater and to salt water intrusion. Expansion of the open water areas increases as wave erosion develops with the creation of additional open water ponds. PORT ARTHUR has consulted with WMA staff in identifying areas of concern. Based on recommendations from the WMA staff, PORT ARTHUR proposes to fill two existing canals and several areas of degraded marsh that will aid in the reestablishment of emergent wetlands in an area locally known as Pintail Flats, as shown in Attachment B.

Restoration of the 225 acres will be accomplished by filling the two canals and existing degraded marsh areas in Pintail Flats with dredged material to an elevation conducive to the establishment of marsh as indicated by geotechnical analysis with the goal of creating 225 acres of emergent wetlands with elevational variability that results in 80 percent vegetated marsh and 20 percent shallow open water. If this goal appears to be in jeopardy then the remedial action plan for vegetation establishment will be implemented. The monitoring and remedial action plan is provided in Attachment C.

The proposed discharge pipe route will be located from the marine berth across PORT ARTHUR's property to an existing canal on the WMA (Attachment B). The discharge pipe will be temporarily installed within the canal and then maneuvered into the dredge disposal area at locations to be field determined in coordination with WMA staff. The target level of fill material will be established by geotechnical analysis of anticipated settling and compaction. The initial elevation of fill material will be surveyed, and markers will be set to visually establish the fill elevations in each of the target waters for treatment. Spoil placement will be conducted in a manner to achieve the fill elevations. The actual amount of area affected by discharge may exceed the desired 225 acres.

ATTACHMENT A

VICINITY MAP
PORT ARTHUR LNG HOLDINGS, LLC
JEFFERSON COUNTY, TEXAS



PORT ARTHUR LNG HOLDINGS, LLC

MITIGATION PLAN SERVING
PROPOSED PORT ARTHUR MARINE TERMINAL
WEST BANK OF PORT ARTHUR SHIP CANAL
NEAR PORT ARTHUR
JEFFERSON COUNTY, TEXAS

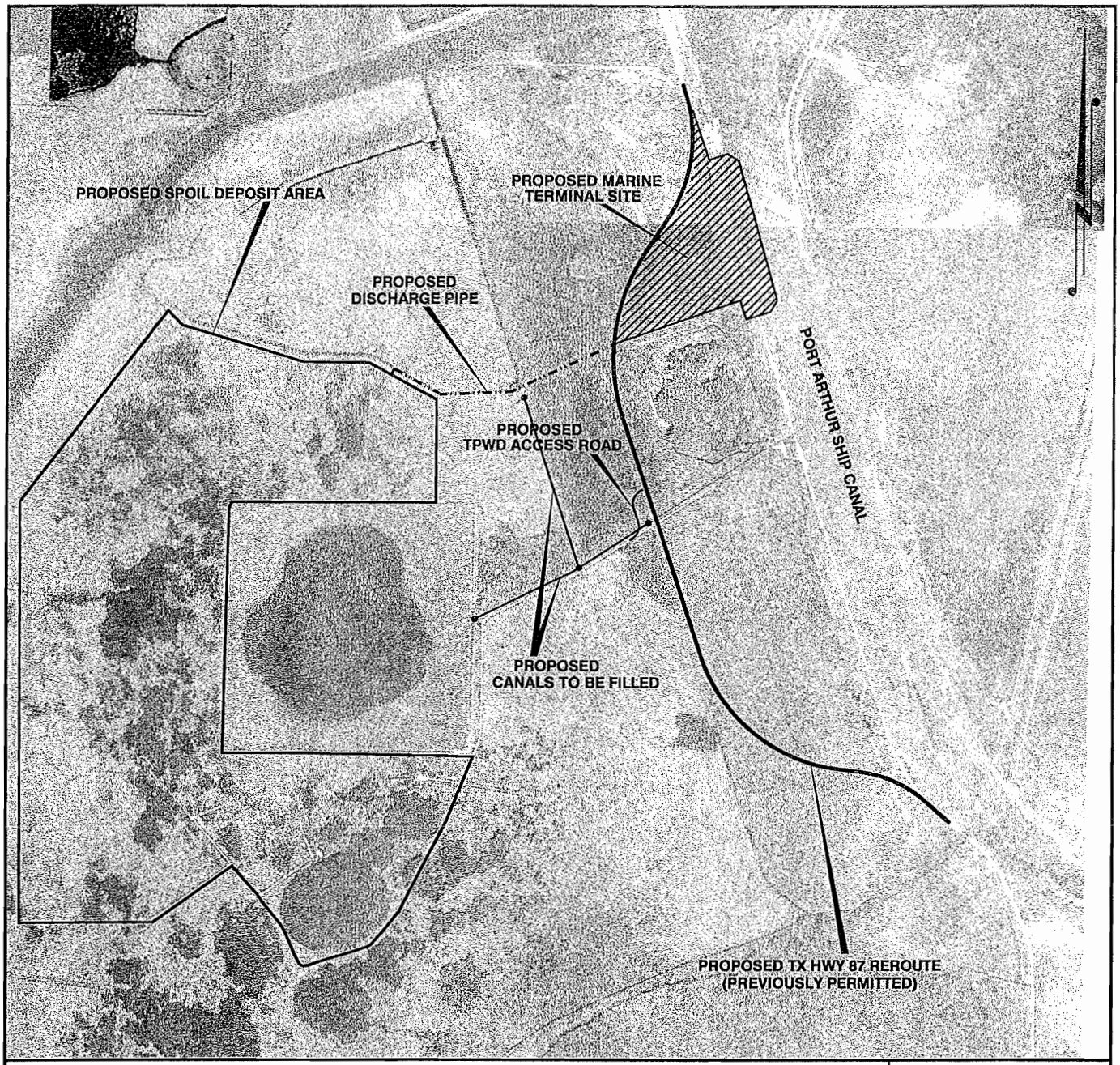
REV. NO.	REV. DATE	REVISION DESC.	REV. BY:
3	9/10/08	ADDITIONAL SPOIL DEPOSIT AREA / TEXAS VICINITY MAP	AZB

TBS T. BAKER SMITH
PROFESSIONAL CONSULTANTS SINCE 1913
(337) 735-2800 www.tbsmith.com

DRAWN BY:	AZB
APPROVED BY:	BST
SCALE:	1 : 250,000
DATE:	6/25/08

ATTACHMENT B

AREA MAP
PORT ARTHUR LNG HOLDINGS, LLC
JEFFERSON COUNTY, TEXAS



SCALE IN FEET

3000' 1500' 0 3000'

AREA MAP

GEODETIC DATUM: NAD27
PROJECTION: TX SOUTH CEN.
GRID UNIT: US SURVEY FEET

PORT ARTHUR LNG HOLDINGS, LLC

MITIGATION PLAN SERVING
PROPOSED PORT ARTHUR MARINE TERMINAL
WEST BANK OF PORT ARTHUR SHIP CANAL
NEAR PORT ARTHUR
JEFFERSON COUNTY, TEXAS

REV. NO.	REV. DATE	REVISION DESC.	REV. BY:
3	9/10/08	ADDITIONAL SPOIL DEPOSIT AREA / TEXAS VICINITY MAP	AZB

TBS T. BAKER SMITH
PROFESSIONAL CONSULTANTS SINCE 1913
(337) 735-2800 www.tbsmith.com

DRAWN BY:	AZB
APPROVED BY:	BST
SCALE:	1" = 3000'
DATE:	6/25/08

ATTACHMENT C

MONITORING GUIDLINES
PORT ARTHUR LNG HOLDINGS, LLC
JEFFERSON COUNTY, TEXAS

PORT ARTHUR LNG HOLDINGS, LLC
NATURAL RESTORATION MONITORING GUIDELINES

PORT ARTHUR will conduct four separate surveys, documented by reports that will be utilized to compare pre- and post-construction site conditions, including one pre-construction report and three completion reports. All reports will use geographical information system (GIS) remote sensing analysis based on aerial imagery and ground surveys of the project site according to the 'Protocols for Data Submission' (protocols) described below. The reports will compare the pre- and post-construction conditions in the permit area, present conclusions on the success or failure of the project activities, and include a proposal to bring the project into compliance. The goal of the marsh creation project is to create 225 acres of emergent wetlands with elevational variability that results in 80 percent vegetated marsh and 20 percent shallow open water. Reports should include the following:

1. The first survey will be conducted before the marsh creation activity begins. PORT ARTHUR will conduct aerial and ground surveys as part of the GIS analyses of the permit area according to the protocols.

2. Supplemental reports will be submitted on the schedule described below. The reports will be submitted to the USACE within 60 days of completion of the surveys. Should the wetland areas not be on target to reach the overall project goal, then the remedial action plan will be implemented to correct any deficiencies.

	Timing of Field Survey	**Performance Standard**
Second Report	End of 1st complete growing season	30 % cover of the vegetated marsh portion of the marsh creation project
Third Report	End of 3rd complete growing season	75 % cover of the vegetated marsh portion of the marsh creation project
Fourth Report	End of 5th complete growing season	Functioning emergent marsh

In the event that the remedial action revegetation plan is required, the above referenced reports will include a transplant survival survey.

DATA SUBMISSION PROTOCOLS (PROTOCOLS)

1. Aerial Imagery Protocol: The first report should utilize recent aerial imagery (within the last 5 years) of the permit area and an area 300 feet wide on each side of the permit area. The second report will utilize aerial imagery taken within two months following the activity completion. The third image will be taken approximately one year after the activity completion, the fourth image taken two years after the activity completion. The imagery will be color infrared, ortho-corrected, with a maximum of 6-inch pixel size, and +/- 1 meter spatial accuracy, presented at a scale of 1 inch to 200 feet.

2. Ground Survey Protocol: Each restoration report will include a GIS analysis of the permit area, accompanied by a ground survey that includes sample points with geographic coordinates, a wetland data sheet with percent of relative vegetation cover, and elevations for each change in plant community throughout the entire permitted area. The survey coordinates should have sub-meter accuracy and data should be recorded and submitted in NAD 1983 UTM zones and coordinates.

3. GIS/Remote Sensing Analysis Protocol: Each report will include aerial imagery of the permit area and a minimum coverage of 300 feet either side of the permit area with a GIS analysis of the aerial imagery. Survey reports will assess all existing plant communities, open water, and special aquatic sites (in acres) within the entire activity area. The GIS analysis will be submitted in reports in 8.5 x 11.0 inch hard copy. If requested by USACE, the analysis may be submitted in Arcview Shapefile format with the Federal Geographic Data Committee complaint metadata, and all raster imagery in GeoTiff format with FGDC compliant metadata, on a CD-ROM.

PORT ARTHUR LNG HOLDINGS, LLC
REMEDIAL ACTION REVEGETATION PLAN

If it is determined during the monitoring process that the vegetation establishment or survival goals are not achieved then the remedial vegetation planting plan will be implemented as outlined below.

Remedial Plantings

Spartina alterniflora (smooth cordgrass) sprigs will be obtained from an agency-recognized or approved source of nursery stock. Other species may be included in the planting plan to mimic natural speciation tendencies observed once onsite studies have been completed. If needed plant stock will be acclimatized for a two-week period prior to transportation to the areas for planting.

- If the 30% aerial coverage goal is not met after the first growing season, smooth cordgrass will be planted on 20-foot centers in 100-foot rows in the areas of concern.
- If the 75% aerial coverage goal is not met after the third growing season smooth cordgrass will be planted on 5-foot to 8-foot centers in areas of concern. In areas that adjoin open waters where erosion due to wave action is a potential concern, smooth cordgrass will be planted on 1-foot centers within a 20-foot buffer of the open water areas.

Remedial Planting Monitoring

A transplant survival survey will be conducted within 60 days of initial planting. If 50% survival is not achieved, a second planting will be initiated within 30 days of initial survey. Written reports detailing plant survival will be submitted to the USACE within 15 days of initial survey completion.

Long term success of the remedial plantings will be monitored as part of the marsh creation monitoring plan.